

WHAT IS CLAIMED IS:

1. A method of detecting the body position of a passenger in a vehicle sitting in a seat, comprising:
  - emitting a light signal using at least one light transmitter; and
  - drawing a conclusion regarding a posture of the passenger based on whether the light signal is received by at least one light receiver or blocked between the at least one light transmitter and the at least one light receiver.
2. The method as recited in claim 1 wherein the posture of the passenger includes as least one of a body inclination and a head position of the passenger.
3. A device for detecting the body position of a passenger in a vehicle sitting in a seat having a back rest, the device comprising:
  - a plurality of light transmitters disposed in a height-staggered fashion on or in the back rest and configured to emit light signals;
  - at least one light receiver disposed in an area illuminated by the light transmitters and configured to receive the light signals; and
  - an analyzing unit configured to analyze at least one received light signal of the light signals so as to enable a conclusion to be drawn regarding a posture of the passenger based on the type or the intensity of the at least one received light signal.
4. The device as recited in claim 3 wherein the signals emitted by the light transmitters are light transmitter-individualized.
5. The device as recited in claim 4 wherein the signals emitted by the light transmitters are light transmitter-individualized by at least one of a time of light transmission and a light signal type.

6. The device as recited in claim 5 wherein the light signal type includes at least one of a frequency, a modulation and break-make ratio.
7. The device as recited in claim 3 wherein the light transmitters are disposed in at least one row.
8. The device as recited in claim 7 wherein the light transmitters are spaced closer in an area of the passenger's lower back than in an area of the passenger's upper back.
9. The device as recited in claim 3 wherein the at least one light receiver is disposed at least partially in or on the head restraint.
10. The device as recited in claim 3 wherein the at least one light receiver is disposed at least partially in or on the roof liner.
11. The device as recited in claim 3 wherein the analyzing unit is disposed on or in the seat.
12. The device as recited in claim 3 wherein the analyzing unit is disposed in an area of the at least one light receiver.
13. The device as recited in claim 3 wherein the analyzing unit includes a memory for reference values for comparing the received at least one light signal with at least one known light signal so as to determine the body position.
14. The device as recited in claim 3 further comprising at least one optical element associated with the at least one light receiver.
15. The device as recited in claim 14 wherein the at least one optical element includes at least one of a convex lens, an aperture, and a filter.

16. The device as recited in claim 3 further comprising at least one optical element associated with at least one of the light transmitters for aligning light of the emitted light signals emitted in a direction of a respective one of the at least one light receiver.
17. The device as recited in claim 3 wherein the at least one light receiver is connected to the analyzing unit via at least one optical waveguide.
18. The device as recited in claim 3 wherein at least one of the light transmitters is connected to a light source via an optical waveguide.
19. The device as recited in claim 3 wherein the analyzing unit is configured to detect at least one of a body length and a back length of the passenger.
20. The device as recited in claim 3 wherein the light signals include at least one of visible light and invisible light.
21. The device as recited in claim 20 wherein the light signals include infrared light.
22. The device as recited in claim 3 wherein the at least one light received is disposed above the light transmitters.
23. The device as recited in claim 3 wherein the posture includes at least one of a body inclination and a head position of the passenger.
24. The device as recited in claim 3 wherein the device is connected to an air bag deployment apparatus.
25. The device as recited in claim 3 wherein the device is disposed in the vehicle.
26. A device for detecting the body position of a passenger in a vehicle sitting in a seat having a back rest, the device comprising:

at least one light receiver disposed in or on the back rest in a height-staggered fashion and configured to receive light signals; and

an analyzing unit configured to analyze at least one received light signal of the light signals so as to enable a conclusion to be drawn regarding a posture of the passenger based on the type or the intensity of the at least one received light signal.

27. The device as recited in claim 26 wherein the posture includes at least one of a body inclination and a head position of the passenger.

28. The device as recited in claim 26 further comprising at least one light transmitter disposed in a receiving area defined by the at least one light receiver and configured to emit the light signals.

29. The device as recited in claim 28 wherein the at least one light transmitter is disposed above the at least one light receiver.

30. The device as recited in claim 28 wherein the light signals emitted by the at least one light transmitter are light transmitter-individualized.

31. The device as recited in claim 30 wherein the signals emitted by the at least one light transmitter are light transmitter-individualized by at least one of a time of light transmission and a light signal type.

32. The device as recited in claim 31 wherein the light signal type includes at least one of a frequency, a modulation and break-make ratio.

33. The device as recited in claim 26 wherein the at least one light receiver includes a plurality of light receivers disposed in at least one row.

34. The device as recited in claim 33 wherein the light receivers are spaced closer in an area of the passenger's lower back than in an area of the passenger's upper back.
35. The device as recited in claim 28 wherein the at least one light transmitter is disposed at least partially in or on the head restraint.
36. The device as recited in claim 28 wherein the at least one light transmitter is disposed at least partially in or on the roof liner.
37. The device as recited in claim 26 wherein the analyzing unit is disposed on or in the seat.
38. The device as recited in claim 26 wherein the analyzing unit is disposed in an area of the at least one light receiver.
39. The device as recited in claim 26 wherein the analyzing unit includes a memory for reference values for comparing the received at least one light signal with at least one known light signal so as to determine the body position.
40. The device as recited in claim 26 further comprising at least one optical element associated with the at least one light receiver.
41. The device as recited in claim 40 wherein the at least one optical element includes at least one of a convex lens, an aperture, and a filter.
42. The device as recited in claim 28 further comprising at least one optical element associated with the at least one light transmitter for aligning light of the emitted light signals emitted in a direction of a respective one of the at least one light receiver.
43. The device as recited in claim 26 wherein the at least one light receiver is connected to the analyzing unit via at least one optical waveguide.

44. The device as recited in claim 28 wherein the at least one light transmitter is connected to a light source via an optical waveguide.
45. The device as recited in claim 26 wherein the analyzing unit is configured to detect at least one of a body length and a back length of the passenger.
46. The device as recited in claim 26 wherein the light signals include at least one of visible light and invisible light.
47. The device as recited in claim 46 wherein the light signals include infrared light.
48. The device as recited in claim 26 wherein the device is connected to an air bag deployment apparatus.
49. The device as recited in claim 26 wherein the device is disposed in the vehicle.